INSTRUCTION MANUAL

EDSR-400

4 Channel Duplex Digital Video Recorder

EDSR-600

6 Channel Duplex Digital Video Recorder

V1.05 2004/3/25

EverFocus®

CAUTION

DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING

TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Safety Precautions

- Refer all work related to the installation of this product to qualified service personnel or system installers.
- Do not block the ventilation opening or slots on the cover.
- Do not drop metallic parts through slots.This could permanently damage the appliance. Turn the power off immediately and contact qualified service personnel for service.
- Do not attempt to disassemble the appliance.To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Contact qualified service personnel for maintenance. Handle the appliance with care. Do not strike or shake, as this may damage the appliance.
- Do not expose the appliance to water or moisture, nor try to operate it in wet areas. Do take immediate action if the appliance becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture may damage the appliance and also cause electric shock.
- Do not use strong or abrasive detergents when cleaning the appliance body. Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove,use a mild detergent and wipe gently.
- Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.
- Do not operate the appliance beyond its specified temperature, humidity or power source ratings. Do not use the appliance in an extreme environment where high temperature or high humidity exists. Use the appliance at temperature within 0ºC ~ +40ºC and a humidity below 90%. The input power source for this appliance is AC100~240V

Safety Precautions

The lightning flash with an arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated " dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons

The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance(servicing)instructions in the literature accompanying the appliance.

Warning :
To prevent fire or shock hazard, do not expose units not specifically designed for outdoor use to rain or moisture.

Attention:
Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

Power Disconnect:
Units with or without ON-OFF switches have power supplied to the unit whenever the power code is inserted into the power source; however, the unit is operational only when the ON-OFF switch is in the ON position.
The power cord is the main power disconnect for all units.

AC100~240V Power Cords

Note:
This is a class A product. In a domestic environment this product may cause radio interference In which case the user may be required to take adequate measures.

Warning:
Electrostatic-sensitive device. Use proper CMOS/MOSFET handing precautions to avoid electrostatic discharge.

UNPACKING
Unpack carefully.
This is electronic equipment and should be handled carefully.
Check to ensure that the following items are included;

- •1. Digital Video Recorder unit
- •2. User's manual
- •3. Power Cord
- •4. HDD tray key and screws
- •5 Alarm I/O board
- •6 C.F Card Reader (Optional)

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper.

Do not place on uneven or unstable work surfaces.
Seek servicing if the casing.

Note:
Before installing and using this unit, please read this manual carefully. Be sure to keep it handy for later reference.
The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

Important Safeguards

Read Instruction---All the safety and operating instructions should be read before the init is operated

Retain Instructions---The safety and operating instructions should be retained for future reference.

Heed Warnings—All warnings on the unit and in the operating instructions should be adhered to.

Follow Instructions—All operating and use instructions should be followed

Cleaning—Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning

Attachments—Do not use attachment not recommended by the product manufacturer as they may cause hazards.

Water and Moisture—Do not use this unit near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.

Servicing—Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Power Cord Protection—Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, playing particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

Object and Liquid Entry—Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock, Never spill liquid of any kind on the unit.

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1. Product Overview

The EDSR400/EDSR600 Duplex Digital Video Recorder (DVR) a full-featured DVR designed specifically for use in security industry.
The DVR incorporates all the benefits of digital video recording, is simple to install, and operates just like a VCR.
Highly efficient compression technology and superior resolution of recorded images make the DVR stand out from the competition as the best choice for security surveillance.
The real time audio recording at any video recording speed that makes it as perfect as your security demand.

1.1 Main Features

A. Special Features:

- **The real time audio recording at any video recording speed (1 pps or above) that makes it as perfect as your security demand.**
- **Adjustable Brightness, Contrast and Color for each channel.**
- **To export event log list/still image/movie file to CF card.**
- **Programmable motion detection area (16X12) for each channel**.

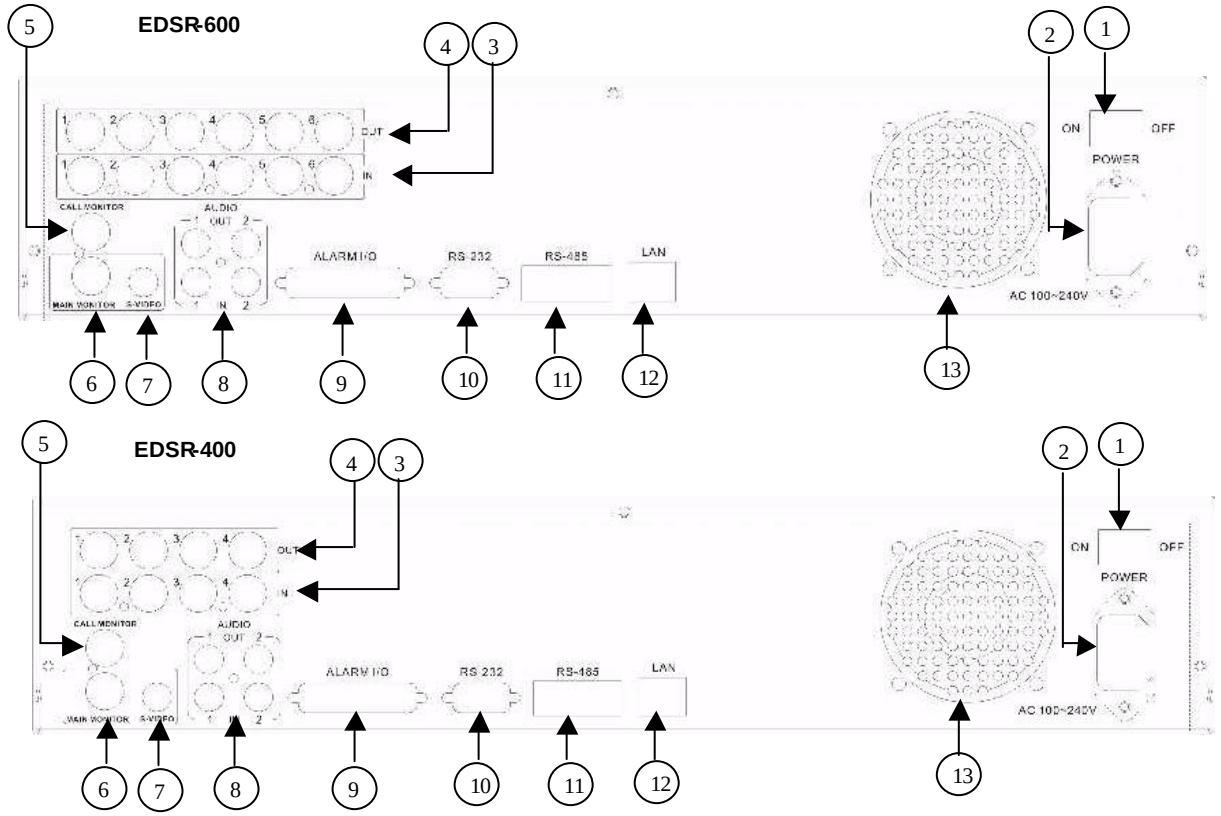
B. General Features

- Easy-to-use control panel with common VCR and Multiplexer functions
- Shuttle/Jog dial for picture-by-picture or fast/slow viewing
- No tapes to manage, clean or replace
- Instant retrieval of stored video
- On-screen setup menu and system timer
- Ethernet TCP/IP connectivity for remote viewing and controlling
- Pre-Alarm recording
- Built-in M-JPEG compression/decompression with configurable video quality
- Programmed with various time-lapse speeds
- Two 3.5” IDE Type Hard Disks for storage with Hot-Swap trays
- RS232 and RS485 for Remote Control
- IR remote control (optional)
- Real-Time Live Display for all cameras
- Variable recording speeds up to 60/50 fields per second for NTSC/PAL
- Alarm- and motion activated recording
- Data export to compact flash card
- 2 channel real time audio recording capabilities

1.2 Specifications

Video Format	NTSC/PAL
Video Input	4 (EDSR400) / 6 (EDSR600) camera inputs (BNC),1Vp-p/75ohm
Video Output	1 BNC video out (1Vp-p/75 ohm) for Main Monitor 1 S-Video out Mini DIN for Main Monitor 1 BNC video out (1Vp-p/75 ohm) for CALL Monitor output 4 (EDSR400)/6 (EDSR600) video out (1Vp-p/ 75 Ohm)for looping
Video Compression	M-JPEG
Recording Resolution	720x484 (NTSC); 720x576 (PAL)
Compact Flash Memory	built-in Compact Flash card slot
Alarm Input	4 (EDSR400)/ 6 (EDSR600) alarm inputs, 25 pin Sub-D
Alarm Output	1 alarm output
Video Display modes	EDSR400: Full, 4, PIP and 2x zoom for Live and Playback EDSR600: Full, 4, 6, PIP and 2x zoom for Live and Playback
Video Loss Detection	Yes
Ethernet	10BaseT Ethernet, RJ45 connector
Event Log	Yes
Hard Disk Storage	Two 3.5” IDE type, hot- swappable
Recording Mode	Continuous, Timer Schedule, Alarm- or Motion Recording
Recording Rate	Up to 60/50 fields per second for NTSC/PAL
Playback Rate	Up to 60/50 fields per second for NTSC/PAL
Playback Search	By Date/Time, Event, Segment
Setup	On screen display setup (OSD)
User Interface	Menu Driven
User Input Device	Front Panel Keypad
Timer	Built-in real time clock
Watch Dog Timer	Yes
RS-232	9-pin female D-Sub
RS485	2 x RJ45 Socket
Audio	2 x Audio In / Out Cinch 500mV max., 10 KOhm impedance
Dimension	430mm (W) x 88mm (H) x 300 (D)
Power Consumption	100W max.
Power Source	AC100~240V
Operating Temperature	0℃ ~ 40℃

2. Back Panel Connections



1 **ON/OFF:** Main on/off switch.

2 **AC100~240V** power socket.

3 **VIDEO IN:** BNC-sockets for composite signal video inputs, automatic 75 Ohm termination. (EDSR400:1~4, EDSR600: 1~6)

4 **VIDEO OUT:** Loop through video outputs for each input channel. (EDSR400:1~4, EDSR600: 1~6)

5 **CALL MONITOR:** BNC-socket Call (Spot) Monitor, composite signal. (Full screen display only)

6 **MAIN MONITOR:** BNC-socket main monitor, composite signal. Main monitor provides Full screen, Multi-screen, Setup.

7 **S-VIDEO:** Mini-DIN socket main monitor, S-Video signal. Main monitor provides Full screen, Multi-screen, Setup.

8 **AUDIO IN :** 2 x Cinch socket audio input 500 mV max., 10 KOhm impedance.

AUDIO OUT: 2 x Cinch socket audio output 500 mV max. at 10 KOhm

⑨ **ALARM I/O: (Refer pin assignment in Appendix-C, Page 44)**

ALM-INPUT : Normally Open (N.O) or Normally Close (N.C) type alarm sensor input. The Alarm Input can be selected as N.O or N.C input in the setup menu. When an alarm occurs, alarm recording will automatically start.

ALM-OUTPUT : Two-way contact relay alarm output. In normal condition, this N.C. contact shorted to ALM-COM. In alarm status, it is open between ALM-NC and ALM-COM, N.O. is shorted to ALM-COM.

⑩ **RS232 connector :** D-Sub 9 pins connector to RS232 ports for remote control.

⑪ **RS485 connector :** 2 x RJ-45 connectors for RS-485 remote control, high impedance
Supported are keyboards KS-KBK, KS-KBJ (Optional).
Maximum units in RS-485 network are 32.
Following EverFocus products are compatible in RS-485 network:
- DVR's EDSR100H, EDSR100M, EDSR400H, EDSR400M, EDSR400, EDSR600, EDSR900, EDSR1600
- Keyboards KS-KBJ (with 3 - axis Joystick, DVR and telemetry control)
KS-KBK (only DVR control)

⑫ **LAN Connector** : RJ-45 LAN connector for internal 10MBit LAN interface.

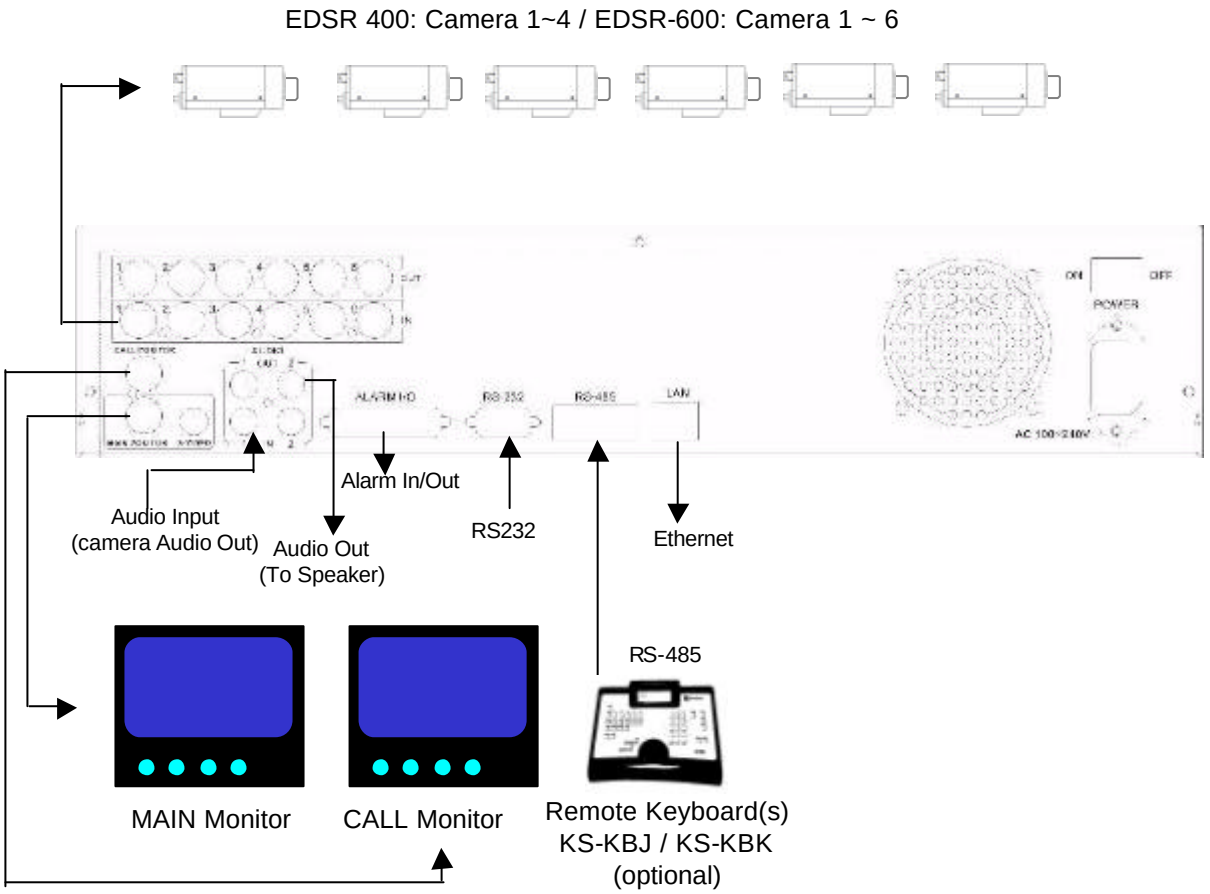
⑬ **FAN:** Cooling fan, do not cover.

3. System Connection

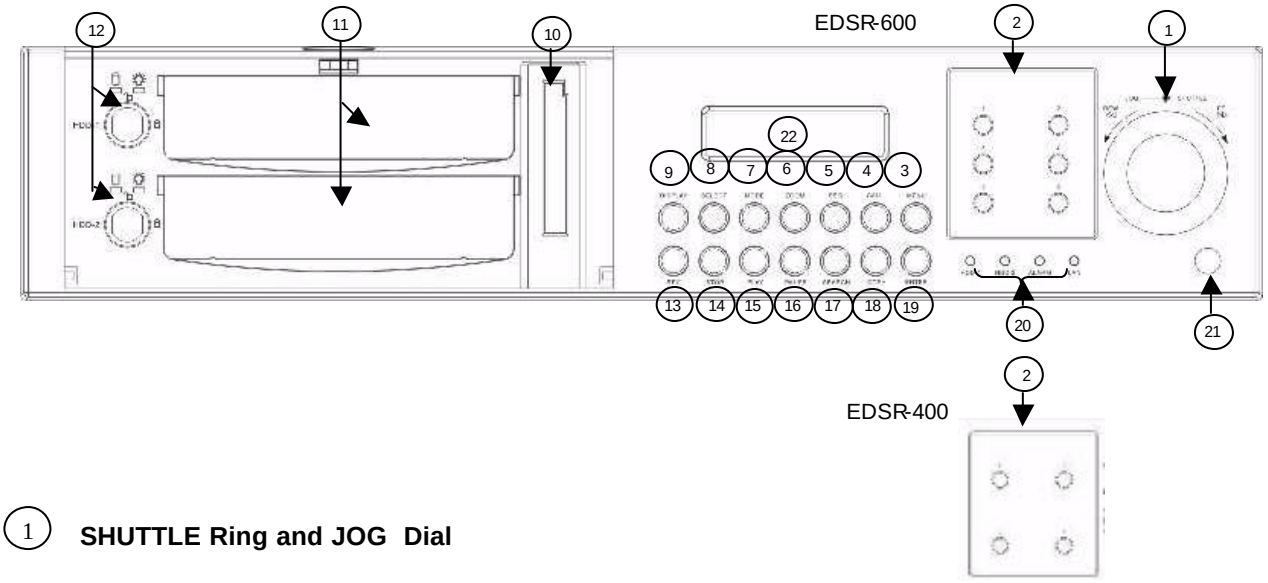
The installations described below should be made by qualified service personnel or system installers.

Before Installation

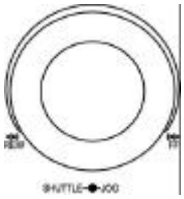
Please refer to the following diagram for the system connections.



4. Front Panel Keypads



1 **SHUTTLE Ring and JOG Dial**



SHUTTLE : In Playback mode, turn the shuttle ring to fast forward/rewind the picture (600X maximum).
In Pause mode, turn the shuttle dial to slow forward/rewind the picture (1/32 maximum).

JOG : In Pause mode, turn the jog dial to step forward/rewind the Picture.
In Menu mode turn the jog dial to select options.

2 **CHANEL KEYS:**.

Press these keys 1 ~ 6 (EDSR400: 1~4) to display video image in full screen format, the picture of the corresponding camera will fill the whole screen of the monitor display.

3 **MENU:** Press this key to enter Setup Menu (Please refer to page 9~25 for details).

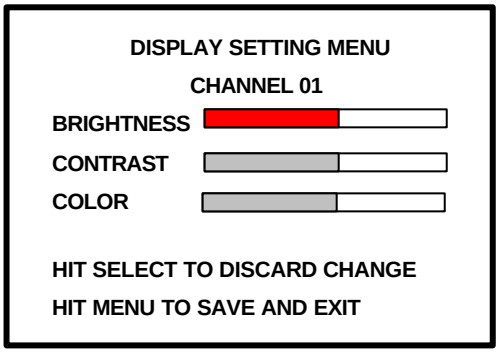
4 **CALL:** Press this key to show picture of assigned camera to desired call monitor.

5 **SEQ :** Press this key to enter the auto sequential switching mode for main monitor.

6 **ZOOM**: Press this key while viewing the full screen image to display X2 zoom-in picture. To move the zooming area, use **JOG** to move from left to right. Press **ENTER** for changing vertical / horizontal movement.

7 **MODE:** Switch Full, 4, (6 for EDSR600), PIP (picture in picture) multi-screen for Live and Playback.

8 **SELECT: In Full screen mode:** press this key to pop-up dialog as below:



In Full screen mode this menu allows color adjustment for each video channel, all channels are separately adjustable.

The selected item will show in red color bar. Use **JOG** to increase or decrease the value. Press **ENTER** to confirm and move to next item. After finished setting, press **SELECT** key to discard change or press **MENU** key to save and exit the dialog.

In Multi-screen mode:

In Multi-screen mode the **SELECT** key allows to define cameras in all multi-screen views.

Press **SELECT**. At the upper left camera in multi-screen appears "**SELECT**".

Use the numeric camera keys (1~6) to select a camera.

Press **ENTER** to switch in the multi-screen.

Press **SELECT** to exit this setting.

Note: Every camera can be selected only once for a multi-screen view.

Note: If the password is "ENABLE", hold "SELECT" button for approximately 2 seconds to logout the system (Return to Level 1).

9 **Display:** Press this key to switch ON/OFF for camera title, date/time and HDD status.
Hold this key longer than 2 seconds for displaying the event log list.

10 **Compact Flash Card Slot:** Insert a Compact Flash Card for archiving video.

11 **Hard Disk Trays:** 2 x Hard Disk holder for 3.5" HDD.

12 **HDD locks:** Turn on HDD power and protection from taking out the HDD without authority.

13 **REC:** Press this key to start recording.

14 **STOP:** Press this key to stop recording or playing back.

15 **PLAY:** Press this key to stat playing back recoded picture (Please refer to page 27 for details).

16 **PAUSE:** Press this key to pause the playback picture.

17 **SEARCH:** Press this key to enter the Search Menu (Please refer page 28~30 for details).

18 **COPY:** Under PAUSE or PLAYBACK**,** Press this key to start copying still picture or video stream into Compact Flash card (Please refer page 31~33 for details).

19 **ENTER**: Press this key to enter sub-menu or confirm setup. When there is Alarm, Motion or Video Loss occurs, press this key for alarm reset. The Event Log Dialog will show on the display, then follow the instruction to continue.

20 **LEDs:** LEDs for HDD1, HDD2 , ALARM and LAN access (from left to right).

21 **IR Remote Controller receiver**

22 **LCD Panel**: To display Date/Time, Recording/Playback and HDD status.

5. Operation

(1) Insert a HDD (IDE) for Video Storage

Insert one or two HDD (3.5" IDE) for Video Storage.
The HDD should be set as Master. (Set Cable Select is also available)
(Normally the default setting of HDD is Master)

Note: After hard disk case is inserted into the hard disk tray, be sure to turn the tray key in lock position.Otherwise, HDD will not be detected.

ATTENTION: Changing HDD s and switching on HDD s is not allowed during recording!

(2) Connect cable for video/audio input and video/audio out,

The detail connection is described in SYSTEM CONNECTION**.**

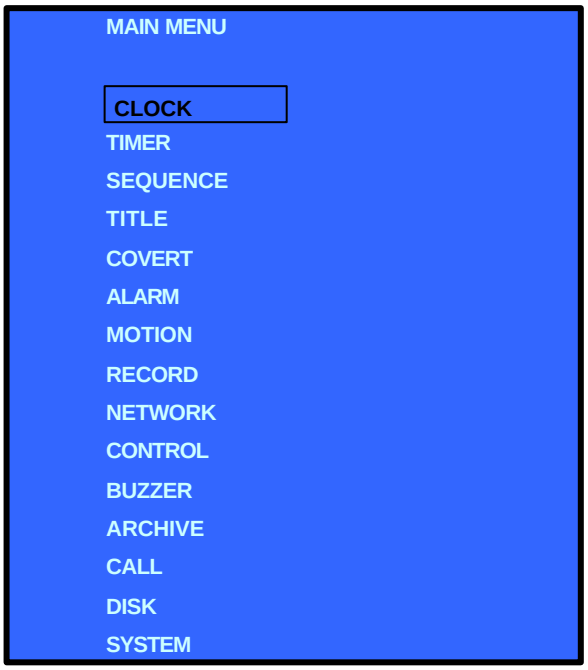
(3) Switch Power On

The LCD panel in the front panel will light when you switch on the power**.**

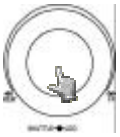
(4) Press MENU key to enter SET UP MENU.

MENU

Once inside the main menu you will find there are 14 set up pages as below:
Selected item will be surrounded by a white block.



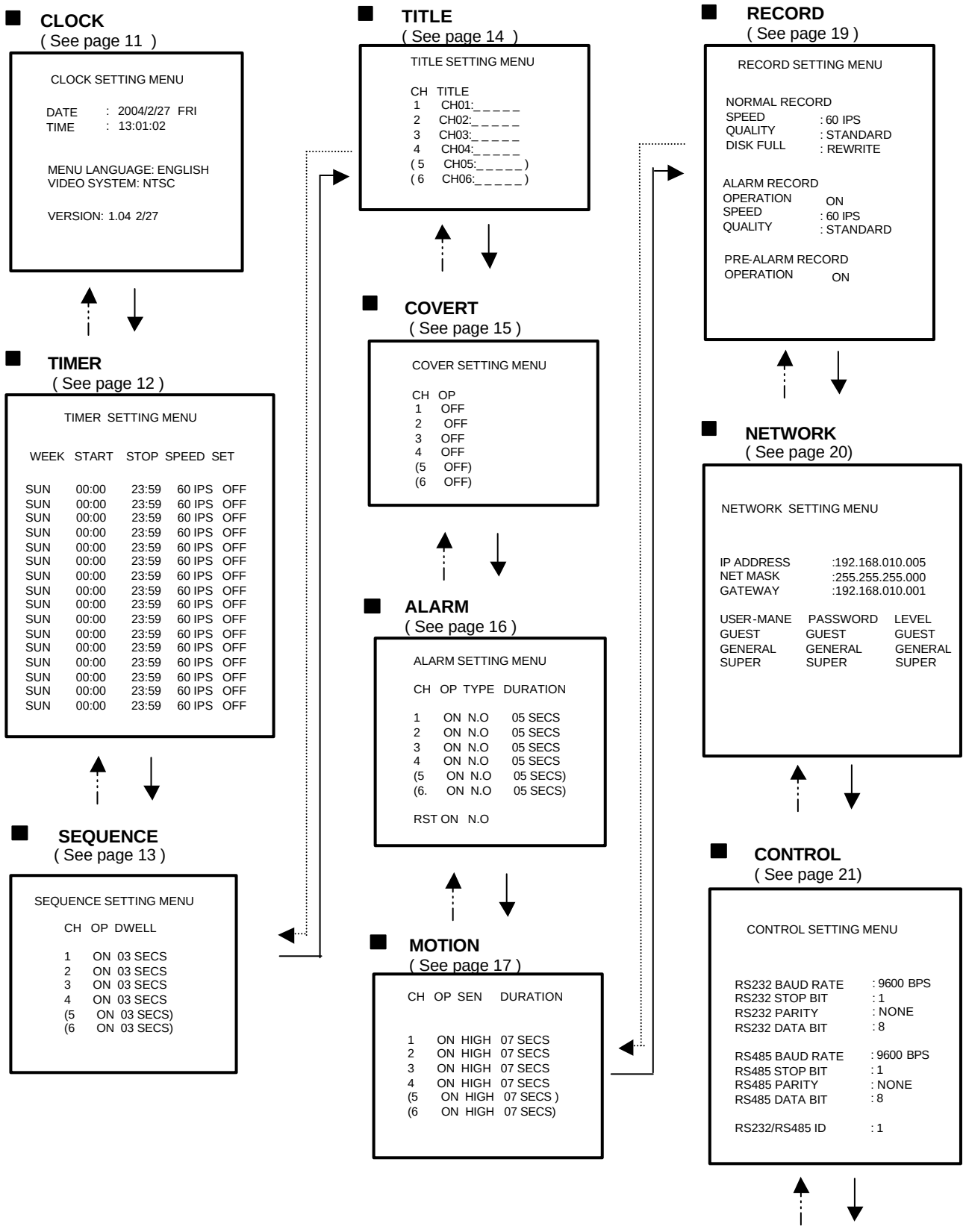
(5)



Turn the **JOG** dial clockwise or counter-clockwise to select the item, press **ENTER** key for detail set up for each item.

(6) Press **MENU** again to leave the set up menu.

6. MENU FLOW


CLOCK
(See page 11)
CLOCK SETTING MENU
DATE : 2004/2/27 FRI
TIME : 13:01:02
MENU LANGUAGE: ENGLISH
VIDEO SYSTEM: NTSC
VERSION: 1.04 2/27
TIMER
(See page 12)
TIMER SETTING MENU
WEEK START STOP SPEED SET
SUN 00:00 23:59 60 IPS OFF
SEQUENCE
(See page 13)
SEQUENCE SETTING MENU
CH OP DWELL
1 ON 03 SECS
2 ON 03 SECS
3 ON 03 SECS
4 ON 03 SECS
(5 ON 03 SECS)
(6 ON 03 SECS)
TITLE
(See page 14)
TITLE SETTING MENU
CH TITLE
1 CH01:_ _ _ _ _
2 CH02:_ _ _ _ _
3 CH03:_ _ _ _ _
4 CH04:_ _ _ _ _
(5 CH05:_ _ _ _ _)
(6 CH06:_ _ _ _ _)
COVERT
(See page 15)
COVER SETTING MENU
CH OP
1 OFF
2 OFF
3 OFF
4 OFF
(5 OFF)
(6 OFF)
ALARM
(See page 16)
ALARM SETTING MENU
CH OP TYPE DURATION
1 ON N.O 05 SECS
2 ON N.O 05 SECS
3 ON N.O 05 SECS
4 ON N.O 05 SECS
(5 ON N.O 05 SECS)
(6. ON N.O 05 SECS)
RST ON N.O
MOTION
(See page 17)
CH OP SEN DURATION
1 ON HIGH 07 SECS
2 ON HIGH 07 SECS
3 ON HIGH 07 SECS
4 ON HIGH 07 SECS
(5 ON HIGH 07 SECS)
(6 ON HIGH 07 SECS)
RECORD
(See page 19)
RECORD SETTING MENU
NORMAL RECORD
SPEED : 60 IPS
QUALITY : STANDARD
DISK FULL : REWRITE
ALARM RECORD
OPERATION ON
SPEED : 60 IPS
QUALITY : STANDARD
PRE-ALARM RECORD
OPERATION ON
NETWORK
(See page 20)
NETWORK SETTING MENU
IP ADDRESS :192.168.010.005
NET MASK :255.255.255.000
GATEWAY :192.168.010.001
USER-MANE PASSWORD LEVEL
GUEST GUEST GUEST
GENERAL GENERAL GENERAL
SUPER SUPER SUPER
CONTROL
(See page 21)
CONTROL SETTING MENU
RS232 BAUD RATE : 9600 BPS
RS232 STOP BIT : 1
RS232 PARITY : NONE
RS232 DATA BIT : 8
RS485 BAUD RATE : 9600 BPS
RS485 STOP BIT : 1
RS485 PARITY : NONE
RS485 DATA BIT : 8
RS232/RS485 ID : 1

BUZZER
(See page 22)

BUZZER SETTING MENU

BUZZER : ENABLE

RECORD-IN : ON
ALARM-IN : ON
MOTION-IN : ON
DISK FULL : ON
VIDEO LOSS: ON
TIMER : ON

DISK
(See page 25)

SYSTEM SETTING MENU

DISK USAGE	HDD-1	HDD-2
SIZE (GB)	: 160	160
RECORD POS	: *67.8%	0%
PLAY POS	: *34.5%	0%
DISK RENEW	: NO	NO

ARCHIVE
(See page 23)

ARCHIVE SETTING MENU

PICTURE SIZE	: 720 X 480
TIME STAMP	: ON
TIME STAMP POS	: TOP
WATER MARK	: ON
WATER MARK POS	: TOP

SYSTEM
(See page 26)

SYSTEM SETTING MENU

PLAY WITH AUDIO- 1: ON
PLAY WITH AUDIO- 2: ON
MULTI-EVENT DWELL: 02 SECS
PASSWORD ENABLE: DISABLE
PASSWORD LEVEL-2: 222222
PASSWORD LEVEL-3: 333333
MULTI-EVENT DWELL: 02 SEC

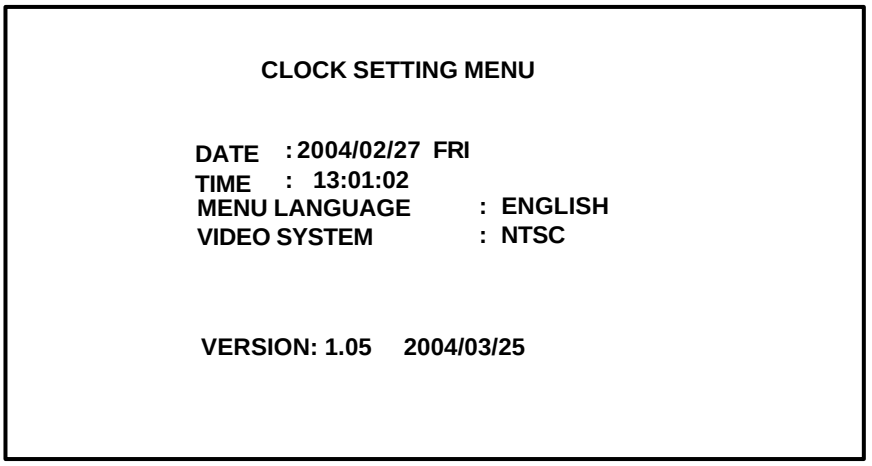
SYSTEM UPDATE: NO
LOAD DEFAULT: NO

CALL
(See page 24)

CALL MONITOR SETTING MENU

CH	DWELL	EVENT
1	07 SECS	NONE
2	07 SECS	NONE
3	07 SECS	NONE
4	07 SECS	NONE
5	07 SECS	NONE
6	07 SECS	NONE

6.1 CLOCK SETTING MENU



In CLOCK/LANGUAGE SETTING MENU , we define:

(1) DATE : Current date, format: YYYY/MM/DD
Year: 2000 ~ 2099, Month: 01~ 12, Date: 01~31, Week: Sunday~Saturday

(2) TIME : Current time, format: HH:MM:SS
Hour: 00 ~ 23, Minute : 00 ~ 59, Second: 00 ~ 59

(3) MENU LANGUAGE: ENGLISH or Others

(4) VIDEO SYSTEM: Factory default setting depend on machine "NTSC" or "PAL" .

(5) VERSION: Current S/W revision and release date.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER
Press **ENTER** key to confirm the option and move to next column.

CALL
Press **CALL** key to confirm the option and move to previous column.

MENU
Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.2 TIMER SETTING MENU

TIMER SETTING MENU

WEEK	START	STOP	SPEED	SET
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF
SUN	00:00	23:59	50 IPS	OFF

In TIMER SETTING MENU we define automatic timer controlled records.

Timer records can be defined for 12 individual start and end times.

(1) WEEK: This select the week day for the timer to record on schedule.
DLY means daily record.
(2) START: Enter the start time for timer recording.
(3) STOP: Enter the end time for timer recording.
NOTE: The recorder records till the end of the minute, which is set here.
EXAMPLE: START 07:00 END 08:00
The recorder records from 07:00:00 till 08:00:59

Each day has to be set separately:
EXAMPLE: Daily record from 20:00 till next day 07:00
WRONG: DLY START 20:00 STOP 07:00
CORRECT: DLY START 20:00 STOP 23:59
DLY START 00:00 STOP 06:59

(4) SPEED : Select recording speed. Maximum 60 (NTSC) / 50 (PAL).
(5) SET: Set "ON" when using timer recording.
Set "OFF" when not using timer recording.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.3 SEQUENCE SETTING MENU

SEQUENCE SETTING MENU

CH	OP	DWELL
1	ON	03 SECS
2	ON	03 SECS
3	ON	03 SECS
4	ON	03 SECS
(5	ON	03 SECS)
(6	ON	03 SECS)

Columns in brackets () only valid for EDSR-600

In the SEQUENCE SETTING MENU, we define for MAIN Monitor

(1) CH (Channel): Input channels 1~4 for EDSR400, 1~6 for EDSR600.

(2) OP (Operation): ON includes the camera in the sequence, OFF skips the camera in the sequence.

(3) DWELL (DWELL TIME) : Dwell Time is individual adjustable for each channel. The dwelling time for the sequencer can be set between 0-99 seconds.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

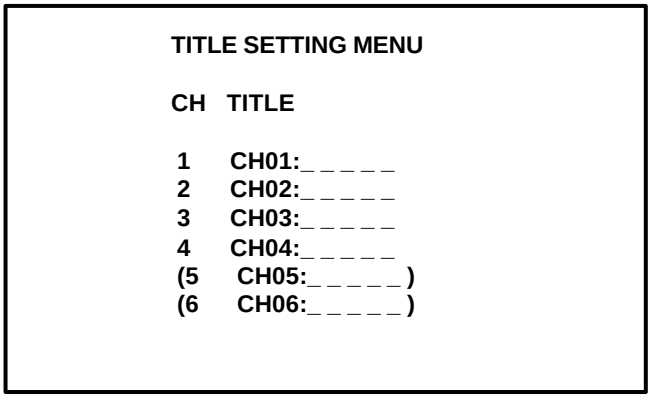
CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.4 TITLE SETTING MENU



Columns in brackets () only valid for EDSR-600

In TITLE SETTING MENU , we define:

The Title Setting Menu allows you to assign a title to each camera input.
Title with up to 12 characters is supported in each channel.

The available alphanumeric characters are:
0,1,2,3,4,5,6,7,8,9,
A,B,C,D,…X,Y,Z.
/ ( ) . - * & @ : ”

Default setting is CH01~CH04 for EDSR400, CH01~CH06 for EDSR600.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.5 COVERT SETTING MENU

COVERT SETTING MENU

CH OP

1 OFF
2 OFF
3 OFF
4 OFF
(5 OFF)
(6 OFF)

Columns in brackets () only valid for EDSR-600

In COVERT SETTING MENU , we define:

The covert setting menu allows you hide the desired camera on the display in a blue background. Change setting to ON for covering camera. Camera is not visible in Live and Playback mode, unless this function is deactivated in COVERT menu.

Default setting is OFF for all cameras.

Note: With network access a covert camera is only visible for users with "ADMIN" password level. For users with "GENERAL" and "GUEST" level the covered camera is not visible.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.6 ALARM RECORD SETTING MENU

ALARM SETTING MENU

CH	OP	TYPE	DURATION
1	ON	N.O	05 SECS
2	ON	N.O	05 SECS
3	ON	N.O	05 SECS
4	ON	N.O	05 SECS
(5	ON	N.O	05 SECS)
(6.	ON	N.O	05 SECS)
RST	ON	N.O	

Columns in brackets () only valid for EDSR-600

In ALARM RECORDING MENU, we define

(1) CH (Alarm input) : Select alarm input or RST for alarm reset input.
(2) OP (OPERATION) : ON : Records when alarm occurs.

OFF : No reaction when alarm occurs.

(3) TYPE : Select alarm type:

N.C. : Normally Closed with time out function counting from alarm start (set in DURATION)
N.C. + TRANS : Normal Closed, alarm duration as long as contacts is active + timeout (set in DURATION)
N.O. : Normal Open with time out function counting from alarm start (set in DURATION)
N.O. + TRANS: Normal Open, alarm duration as long as contact is active + timeout (set in DURATION)

(4) DURATION : Timeout duration time for each event. 0~99 seconds adjustable.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.7 MOTION SETTING MENU

```
MOTION SETTING MENU

CH   OP    SEN     DURATION

1     ON   HIGH    05  SECS
2     ON   HIGH    05  SECS
3     ON   HIGH    05  SECS
4     ON   HIGH    05  SECS
(5    ON   HIGH    05  SECS)
(6.   ON   HIGH    05  SECS)

Press 1~6 TO MANUAL EDIT
```

Columns in brackets () only valid for EDSR-600

In the MOTION RECORD SETTING MENU, we define

(1) CH (Channel) : Video input channel
(2) OP (Operation) : Default: OFF
ON: The device will respond recording when motion occurs.
OFF: The device will not respond recording when motion occurs.
(3) SEN (Sensitivity) : HIGH, MIDDLE or **LOW** adjustable. Default: MIDDLE.
(4) DURATION: Duration time for motion record and Alarm Out relay.
0~99 seconds adjustable. Default: 05 seconds.

Note: Hit the numeric keys 1~4/6 to select a camera for setting the detection areas.The selected camera appears with a 16 x 12 grid (detection zones). See next page for details.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

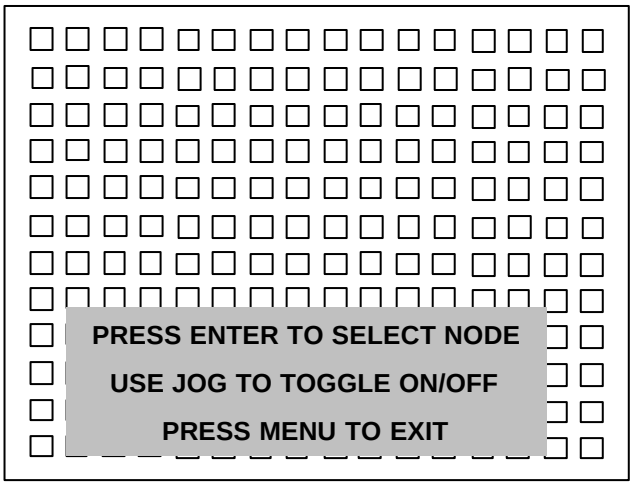
MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

(5) Press 1-4/6 TO MANUAL EDIT:

Use the numeric keys (1~4 for EDSR-400 / 1~6 for EDSR-600) to select a camera for setting the detection areas.

The selected camera appears with a 16 x 12 grid (detection zones):
Follow the Dialog for further operation.



Turn the **JOG** dial clockwise or counter-clockwise to switches zone ON – active (area filled) or OFF – inactive (area empty) for motion detection.

ENTER

Press **ENTER** key to confirm the option and move to next detection field.

CALL

Press **CALL** key to confirm the option and move to previous detection field.

MENU

Press **MENU** key to return to Motion setup Menu.

6.8 RECORD SETTING MENU

RECORD SETTING MENU

NORMAL RECORD
SPEED : 50 IPS
QUALITY : STANDARD
DISK FULL : REWRITE
ALARM RECORD
OPERATION ON
SPEED : 50 IPS
QUALITY : STANDARD

PRE-ALARM RECORD
OPERATION ON

In NORMAL RECORDING MENU, we define

(1) NORMAL RECORD:

SPEED : To set the normal recording speed. Maximum 60 (NTSC) / 50 (PAL).

QUALITY: Video recording quality setup for setting the quality of the video picture by selecting a compression rate. There are six quality levels for recording

LOWER : 15 KB
LOW : 19 KB
BASIC : 23 KB
STANDARD : 27 KB
HIGH : 31 KB
SUPERIOR : 35 KB

DISK FULL: Set **REWRITE** or **STOP** when HDD is full.

(2) ALARM RECORD (for Alarm In and Motion detection):

OP (Operation): Select **ON** or **OFF** to activate alarm recording or not.

SPEED : To set the alarm and motion recording speed. Maximum 60 (NTSC) / 50 (PAL).

QUALITY: Video recording quality setup, this item lets you set the quality of the video picture by selecting a compression rate.

NOTE: The recording rates are for the total system: The single camera record rate is:
Camera record rate = System record rate / Number of connected cameras
Example: Record Rate 60 IPS, 6 connected cameras: 10 IPS / camera

(3) PRE-ALARM RECORD: (with Alarm In and Motion)

Pre – Alarm duration is depending on record quality (about 8-15 seconds).

OP (Operation): Select **ON** or **OFF** to activate pre-alarm recording or not .

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.9 NETWORK SETTING MENU

NETWORK SETTING MENU

IP ADDRESS	: 192.168.010.005
NET MASK ADDRESS	: 255.255.255.000
GATEWAY ADDRESS	: 192.168.010.001
MAC ADDRESS	: 00:5A:56:A3:87:1A

USER-NAME	PASSWORD	LEVEL
GUEST---	GUEST---	GUEST---
GENERAL-	GENERAL-	GENERAL-
ADMIN---	ADMIN---	ADMIN---

In the NETWORK SETTING MENU, we define

(1) **IP ADDRESS :** Assign an fixed IP address for this unit, for example:192.168.010.005

(2) **NET MASK ADDRESS:** Assign a subnet mask of the network for this unit, for example:255.255.255.000

(3) **GATEWAY ADDRESS:** Assign a default gateway for this unit, for example:192.168.010.001

(4) **MAC ADDRESS:**
Hardware address of the network interface. Do not modify without instruction of network administrator.

Note: After changing network settings, screen will comes up as following:

Network setting……..
Please reboot to effect network setting

After restart of EDSR the new network settings are activated.

(5) **USER-NAME PASSWORD LEVEL**

The Login name and password are used to establish a network connection to the unit. The PASSWORD setup allows the administrator to set the new Login name and password with access level "ADMIN","GENERAL" or "GUEST".

The system allows up to four users connected at same time with different access levels.
"**ADMIN** " : can view live/playback video, covert cameras and control all operation/setup.
"**GENERAL**": can view live and playback video.
"**GUEST**":can only view live display.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.10 CONTROL SETTING MENU

CONTROL SETTING MENU

RS232 BAUD RATE	: 9600 BPS
RS232 STOP BIT	: 1
RS232 PARITY	: NONE
RS232 DATA BIT	: 8
RS485 BAUD RATE	: 9600 BPS
RS485 STOP BIT	: 1
RS485 PARITY	: NONE
RS485 DATA BIT	: 8
RS232/RS485 ID	: 001

In the CONTROL SETTING MENU, we define

(1) RS232 BAUD RATE: There are 6 different speeds that can be used to transmit instruction or information through the RS232 port on the device, 1200 baud,2400 baud,4800 baud,9600 baud, 19200 baud,and 3840 baud. The default setting from the factory is 9600 baud.

(2) RS232 STOP BIT: Select stop bit: 1 or 2

(3) RS232 PARITY: Select parity mode: NONE/ODD/EVEN

(4) RS232 DATA BIT: Select data bit : 8 or 7

(5) RS485 BAUD RATE: There are 6 different speeds that can be used to transmit instruction or information through the RS485 port on the device, 1200 baud,2400 baud,4800 baud,9600 baud, 19200 baud,and 3840 baud.

(6) RS485 STOP BIT: Select stop bit: 1 or 2

(7) RS485 PARITY: Select parity lever: NONE/ODE/EVEN

(8) RS485 DATA BIT: Select data bit : 8 or 7

(9) RS232/RS485 ID: RS232/RS485 address.The address range for the DVR: 001~200.

NOTE: Settings for remote keyboards KS-KBK and KS-KBJ:

RS-485 Baud rate: 9600, 1 Stop bit, Parity NONE, ID (device number) range: 1~32

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.11 BUZZER SETTING MENU

BUZZER SETTING MENU

BUZZER	:	ENABLE
RECORD-IN	:	ON
ALARM-IN	:	ON
MOTION-IN	:	ON
DISK FULL	:	ON
VIDEO LOSS	:	ON
TIMER	:	ON

In BUZZER SETTING MENU, we define the buzzer ON/OFF for following event:

RECORD-IN, ALARM-IN, MOTION-IN, DISK FULL, VIDEO LOSS AND TIMER

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

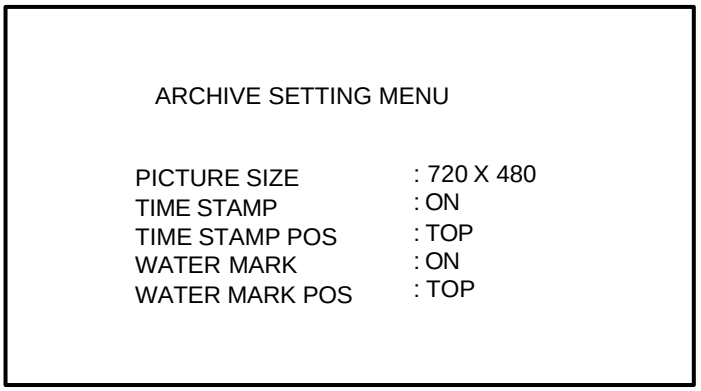
CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.12 ARCHIVE SETTING MENU



In the ARCHIVE SETTING MENU, we define for picture and movie export to CF-card:

(1) PICTURE SIZE :

Selects picture size for copying image to CF card:

Big size:720x480 / 720x576 for NTSC / PAL.

Small size:352x240 / 352x288 for NTSC / PAL.

(2) TIME STAMP :

ON: Shows the time stamp on the picture when copying image to CF card.

OFF: This erases the time stamp on the picture when copying image to CF card.

(3) TIME STAMP POS (Position):

BOTTOM: The time stamp will show on the bottom of the image.

TOP: The time stamp will show on the top of the image.

(4) WATER MARK:

ON: Shows a water mark on the picture when copying image to CF card.

OFF: No water mark on the picture when copy image to CF card.

(5) WATER MARK POS (Position):

BOTTOM: Water mark will show on the bottom of the image.

TOP: Water mark will show on the top of the image.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.13 CALL MONITOR SETTING MENU

CALL MONITOR SETTING MENU

CH	DWELL	EVENT
00	07 SECS	NONE
00	07 SECS	NONE
00	07 SECS	NONE
00	07 SECS	NONE
(00	07 SECS	NONE)
(00	07 SECS	NONE)

Columns in brackets () only valid for EDSR-600

In the CALL MONITOR SETTING MENU, we define the sequences of each CH for call monitor .

CH, DWELL, EVENT:

(1) CH (Channel): Select the camera to be shown in the standard sequence of this call monitor. With setting “00” the channel will be skipped in the sequence.

(2) DWELL (Dwelling time): Set 0~99 seconds for the dwelling time of each camera.

(3) EVENT: Set the alarm and correspondent motion to the camera.

NONE: no alarm or motion action is assigned to this camera.

MOTION: If MOTION detection is active for this camera, the camera will be displayed, if motion is detected. After alarm record duration the monitor switches back to standard sequence or spot camera (depending on operation).

A01 ~ A06: The camera will be displayed, if selected alarm input is active.

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.14 DISK SETTING MENU

DISK SETTING MENU

DISK USAGE		**HDD-1**	**HDD-2**
SIZE (GB)	**:**	**160**	**160**
RECORD POS	**:**	*** 30.7%**	**0%**
PLAY POS	**:**	***30.7%**	**0%**
DISK RENEW:		**NO**	**NO**

In the DISK SETTING MENU, we define

(1) DISK USAGE: HDD-1, HDD-2
(2) SIZE: Applied HDD size.
(3) RECORD POS: HDD usage rate, record position, "*" shows the active HDD
(4) PLAY POS: current playback position, "*" shows the active HDD
(5) DISK RENEW: Erase HDD-1, HDD-2

Turn the **JOG** dial clockwise or counter-clockwise to select the options.

ENTER

Press **ENTER** key to confirm the option and move to next column.

CALL

Press **CALL** key to confirm the option and move to previous column.

MENU

Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

6.15 SYSTEM SETTING MENU

SYSTEM SETTING MENU	
PLAY WITH AUDIO-1 :	ON
PLAY WITH AUDIO-2 :	ON
PLAY SPEED :	50 IPS
PASSWORD ENABLE :	DISABLE
PASSWORD LEVEL-2 :	222222
PASSWORD LEVEL-3 :	333333
MULTI-EVENT DWELL:	02 SEC
SYSTEM UPDATE:	NO
LOAD DEFAULT:	NO

For password Input, you may use the CH keys (Pic 1) or following function keys (Pic 2).

Pic 1

Pic 2

In the SYSTEM SETTING MENU, we define

(1) PLAY WITH AUDIO: AUDIO-1, AUDIO-2

ON/OFF: Play back with or without audio.

(2) PLAY SPEED: Set the playback speed. Maximum 60 (NTSC) / 50 (PAL).

(3) PASSWORD ENABLE: Enable/Disable the password protection. Once you enable the password, the default value is Level-1 **(Lowest level)** for live view only (CH keys, MODE, SEQ and ZOOM buttons). Default: 111111

(4) PASSWORD LEVEL-2: (**General**): Live and Playback view. (Limited: MENU and CALL buttons, Event Log List and Display Setting). Default: 222222

(5) PASSWORD LEVEL-3 (Highest): All buttons and configuration. Default: 333333

Note: Press SELECT button for around 3 seconds to logout the system and return to level-1.

(6) MULTI-EVENT DWELL: Define the dwell time when there are more than one event triggered at the same period.

(7) SYSTEM UPDATE: Select **YES/NO** for updating system.

YES: Download the update S/W into C.F card through your PC and insert the CF card into the slot on the front panel of DVR. Press **ENTER** key to start.

Notice: After the system is successfully updated, please reboot the system.

(7) LOAD DEFAULT: Select **YES/NO** to load factory default setting, necessary after update.

	Turn the **JOG** dial clockwise or counter-clockwise to select the options.
ENTER	Press **ENTER** key to confirm the option and move to next column.
CALL	Press **CALL** key to confirm the option and move to previous column.
MENU	Press **MENU** key to return to Main Menu, press again to leave Set up Menu.

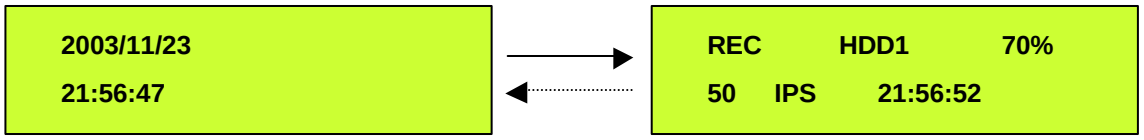
7.1 INSTANT RECORDING

REC

Press **REC** key to start continuous recording with setting of “NORMAL RECORD”.

The recording rate and recording quality are set in the RECORD SETTING MENU.

The LCD screen on the front panel of DVR will display as follows:



Display shows operation status, active HDD, record position on active HDD, record frame rate ant current time.

REC, Maximum 60 (NTSC) / 50 (PAL) fields will also show on the main monitor display if you press the **DISPLAY** key to show camera title and date/time.

STOP

Press **STOP** key to stop recording.

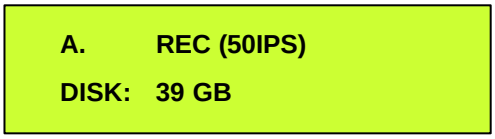
Since the DVR had Duplex feature, STOP key can be activated both in Playing back and Recording. In Duplex mode first STOP will stop playback, second STOP will stop recording.

When the HDD is full, the machine will Stop recording automatically or Auto Overwrite from the beginning of the HDD. It depends on the setting in **RECORD SETTING MENU**.

7.2 ALARM RECORDING

When the ALARM OPERATION setting is “ON”, the DVR will automatically record when alarm occurs , and will automatically stops recording at the end of the alarm duration period.

As example, we set ALARM RECORDING SPEED on 60 (NTSC) / 50 (PAL) field, the screen will show as below,



Instant recording and timer recording will stop when an alarm occurs.

Please refer details in RECORD SETTING MENU (page 19).

8.1 NORMAL PLAYBACK

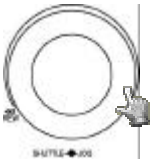
(1) Playback

PLAY

Press the **PLAY** key to start playing back the stored image/audio from the last SEGMENT.

NOTE: In Duplex mode (simultaneous record and playback) the playback speed is limited to 25 IPS. For real time display of 50 IPS records stop recording before starting playback.

(2) Fast Forward/Reverse Playback



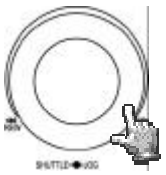
During playing back, turn the **SHUTTLE** ring clockwise to start fast forward playing back.
The speed will be shown on the screen at the bottom of the screen.
>> 2X, 4X, 8X, 16X, 32X, 600X

Turn the SHUTTLE ring counter-clockwise to start fast reverse playing back.
The speed will be shown on the screen.
<< 2X, 4X, 8X, 16X, 32X, 600X

(3) Slow Forward/Reverse Playback

PAUSE

During playing back,press **PAUSE** key to freeze the playing back picture.



Turn the **SHUTTLE** ring clockwise to start slow forward playing back.
The speed will show at the bottom of the screen.
>> 1/2, 1/4, 1/8, 1/10, 1/16, 1/32

Turn the **SHUTTLE** ring counter-clockwise and slow reverse playback starts.
The speed will show on the SCREEN at the corner of the screen.
<< 1/2, 1/4, 1/8, 1/10, 1/16, 1/32

(4) Field advance Forward/Reverse

During **PAUSE** mode, turn the **JOG** dial clockwise to advance the still image field by field.

Turn the job dial counterclockwise to rewind the still image field by field.

(5) Press STOP key to stop playing back.

Notice: Press STOP key again will stop recording. Please check the REC key if it lights or not after your operation.

8.2 SEARCH PLAYBACK

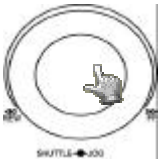
(1) Segment List search playback

SEARCH

Press **SEARCH** key to enter the SEARCH MENU dialog.

```
SEARCH  MENU

BY  SEGMENT  LIST
BY  ALARM  LIST
BY  DATA  TIME
```



Turn the **JOG** dial to select BY SEGMENT LIST and press **ENTER** key.
A **segment** is a range on the HDD, beginning with record start (manual, alarm, motion or after power loss) and ending with record stop.
NOTE: If the recorder starts to overwrite a HDD, also a new segment will be generated.
The submenu will display as follows:

```
SEGMENT  SEARCH                    ▼

0001    2003/04/24  19/03/29  HDD1
0002    2003/04/25  12/30/30  HDD1
0003    2003/05/20  12/00/00  HDD2
```

▼: The icon means there is more than one page list. Use "**SHTTLE**" to change between pages or use "**JOG**" to select one list.

Turn the **JOG** dial to select desired items.

ENTER

Press **ENTER** key to start playing back selected segment.

STOP

Press **STOP** key to end playing back and return to static display.

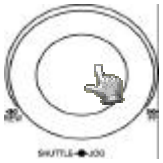
(2) Alarm List search playback

SEARCH

Press **SEARCH** key to enter the SEARCH MENU dialog.

```
SEARCH  MENU

BY  SEGMENT  LIST
BY  ALARM  LIST
BY  DATA  TIME
```



Turn the **JOG** dial to select BY ALARM LIST and press **ENTER** key. The submenu will display as follows:

```
ALARM  SEARCH                                    ▼

00001    M01  2003/04/24   19:03:29   HDD 1
00002    A03  2003/04/25   12:30:30   HDD1
00003    M03  2003/05/20   12:00:00   HDD2
```

A01 : Alarm recording by Alarm-in 1.
M03: Motion recording by camera 3.
T : Timer recording.
PL: automatic record restart after end of power loss
▼ : The icon means there is more than one page list. Use "**SHTTLE**" to change between pages or use "**JOG**" to select one list.

ENTER

Press **ENTER** key to start playing back selected alarm list.

STOP

Press **STOP** key to end playing back and return to static display.

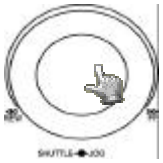
(3) Date/Time Search Playback

SEARCH

Press **SEARCH** key to enter the SEARCH MENU dialog.

```
SEARCH  MENU

BY  SEGMENT  LIST
BY  ALARM  LIST
BY  DATA  TIME
```

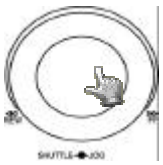


Turn the **JOG** dial to select BY DATA TIME and press **ENTER** key. The submenu and instruction will display as follows:

```
DATE/TIME SEARCH

YEAR/MM/DD  HH:MM:SS  HDD
2003 /01 /01    21: 33: 26     1

PRESS SEARCH TO START SEARCH
PRESS MENU TO EXIT
```



Turn the **JOG** dial to select desired date/time and stored hard disk.

SEARCH

Press **SEARCH** key to start playing back by date/time search or press **MENU** key to exit..

Notice: If there is no image stored in the date/time specified then the machine will start playing back from the nearest set time automatically.

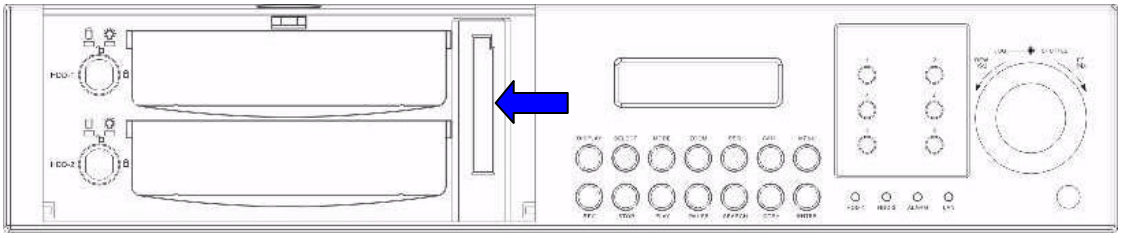
STOP

Press **STOP** key to end playing back and return to static display.

9. DATA EXPORT

Insert a Compact Flash card into the Compact Flash slot on the front panel of DVR.
When inserting the Compact Flash card, make sure that insert direction is correct.

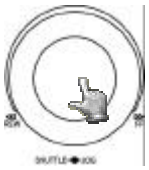
NOTE: COPY function is not possible during RECORD. Stop recording to enable COPY function!



9.1 STILL IMAGE COPY

PAUSE

The still image copy function is possible in all playback view modes.
Press the **PLAY** key to start playing back.
Press the **PAUSE** key to pause playback.
The Monitor OSD shows “PAUSE ON” (1~4 for EDSR-400, 1~6 for EDSR-600)” . The displayed number shows the active channel for the COPY function.



Turn the **JOG Dial** clockwise to choose your desired image.

COPY

While displayed as your desired image of choice ,
press the **COPY** key. The “ Copying …” will be shown on the screen during the process.

Notice:
Copied images are stored as a single picture. Copied files are saved as .JPG file.

Notice:
Please wait after the message “DONE” about 5 seconds before removing CF-card for ensure correct finish of write process.

9.2 COPY TO MOVIE FILE

NOTE: COPY function is not possible during RECORD.

Stop recording to enable COPY function!

PLAY

Press the **PLAY** key to start playing back.

COPY

Press **COPY** key and then the copy menu and instruction appears.
The main monitor switches to full screen display with following OSD:

```
                    CH01

          COPY TO MOVIE FILE


          USE JOG TO SELECT PICTURE
          PRESS COPY TO START COPY
          PRESS PAUSE TO PAUSE COPY
          PRESS STOP TO CLOSE FILE
          PRESS MENU TO EXIT

          2003/11/01          00:08:08
```

Turn the **JOG Dial** clockwise to choose your channel for copying.

COPY

While displaying as your desired image of choice,
Press **COPY** key to start copying image.

PAUSE

Press **PAUSE** key to pause copy image.

STOP

Press **STOP** key to finish copy and close file.

MENU

Press **MENU** key to return to playback. Press **STOP** to stop playing back.

Notice: Please wait after the message “DONE” about 5 seconds before removing CF-card for ensure correct finish of write process.

Notice: Copied images are stored as a movie picture. Copied files are saved as .MOV file. Use QuickTime to play the retrieved .MOV files. You may download QuickTime at www.apple.com. The playback version for QuickTime is free.

9.3 EXPORT EVENT LOG LIST

This function allows to export the event log list to CompactFlash – Card.
The generated text file is in *.txt format.

DISPLAY

Press „DISPLAY“ key and hold key for about 2 seconds.

EVENT LOG

TYPE	ID	TIME	
MOTION	2	2004/01/02	12:12:54
VL	1	2004/01/02	12:12:54
VL	3	2003/12/29	12:12:54
VL	1	2003/12/28	12:12:54

USE JOG TO SWITCH PAGE
HIT CALL TO TURN OFF BUZZER
HIT COPY TO SAVE EVENT TO CF CARD
HIT MENU TO EXIT

The event log list will be displayed:

TYPE: event type: **MOTION** : motion detection
ALARM: alarm in
VL: video loss
PL: restart after Power Loss

ID: video input number for motion and video loss, alarm in contact for Alarm
TIME: start time of event

Turn the **JOG Dial** to jump to next event list page.

CALL

Press **CALL** to switch off buzzer, if active.

COPY

Press **COPY** to save the current event list page to Compact Flash Card.

MENU

Press **MENU** to exit event log list.

10. MONITOR VIEWS / OPERATION

The EDSR400/EDSR600 digital recorders provide 1 main monitor and 1call monitors.

These monitors have different functionalities:

Main monitor:
- Full screen and multi screen display
  EDSR400: Full screen, 4, PIP, and 2x zoom
  EDSR600: Full screen, 4, 6, PIP, and 2x zoom
- Live and Playback display
- OSD for camera title, status messages, setup menu

CALL monitor:
- full screen display
- sequence mode or fixed camera display
- display of motion or alarm cameras
- OSD for camera title and alarm messages

10.1. MAIN MONITOR

MODE

The **MODE** key switches the different multi-screen modes.

The numeric keys switch to full screen mode with the selected camera.

DISPLAY

DISPLAY switches the OSD for camera titles and status messages ON/OFF.

ZOOM

The zoom function is only available in full screen mode. Press **ZOOM** to activate the electronically 2 x zoom. Use the **JOG** dial to move left/right in the picture. **ENTER** switches vertical / horizontal movement.

10.2. CALL MONITORS

CALL

Press **CALL** to change settings for **CALL** monitor.
The Main monitor shows following dialogue:

SETTING CALL MONITOR...

SPOT 03
OSD ON

HIT 1~4 (1~6) TO SELECT SPOT CAMERA
PRESS SEQ FOR SEQUENTIAL CAMERA
PREE DISPLAY TO TURN OSD ON/OFF
PRESS MENU TO EXIT

Please follow the instruction on the display for further operation:

SPOT: Hit numeric keys 1~4 for EDSR400, 1~6 for EDSR600 to select spot camera.

SEQ: For sequential cameras.

OSD: Press **DISPLAY** button to turn OSD ON/OFF.

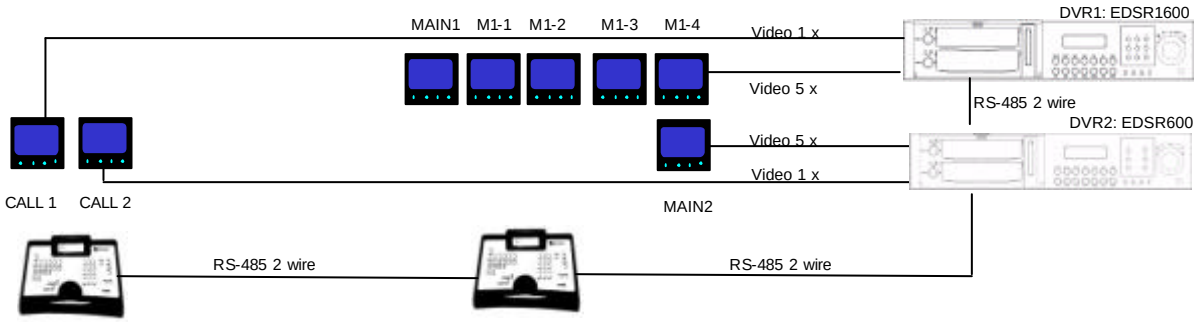
Press **MENU** button to exit

11. REMOTE CONTROL

11.1 RS-485 REMOTE CONTROL

The new standard EverFocus EDSR remote protocol allows challenging installations with DVR remote control at different installation sites.
EDSR remote control is supported by the optional keyboards **KS-KBJ** (with 3-axis joystick and 2 additional RS-485 – Ports for telemetry control with independent telemetry protocols) and **KS-KBK** (no telemetry).
Up to 32 units are allowed in the RS-485 bus. The RS-485 bus requires serial wiring with 2-wire shielded twisted pair cable("daisy chain"). Maximum cable length of the bus is 1200 m.
Star wiring is only possible with additional RS-485 distributor.
Mixed installation is possible with following recorder types:
EDSR100H, EDSR100M, EDSR400H, EDSR400M, EDSR400, EDSR600, EDSR900, EDSR1600
For installation details please consult the manuals of KS-KBK and KS-KBJ keyboard.

Installation example (2 remote operators, 1 EDSR600, 1 EDSR1600) :

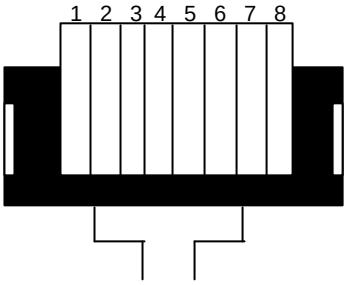


Operator 1:
1x Full screen view DVR1
1x Full screen view DVR2

Operator 2:
1x Multi screen view DVR1 (MAIN)
4x Full screen view DVR1 (MATRIX)
1x Multi screen view DVR1 (MAIN)

RJ45 (RS485) pin assignment

There are two RJ-45 (RS-485) connectors on the back panel of the DVR (loop through). Please refer the following pin assignment for application.



PIN	FUNCTION
1	GND
2	NC
3	RX +
4	NC
5	NC
6	RX -
7	NC
8	NC

11.2 IR Remote Controller (optional)

The remote controller (RC-200, Figure 1) is an accessory to enhance the handy operations of the DVR. You can perform all the settings and operations by the remote controller. The effective distance is up to 10 meters without any obstacle. The keypad functions are same as the front panel key button of the DVR.

There are some replacement keys for JOG and SHUTTLE, definitions are:

JOG ▶ : Same as turning the JOG clockwise.

JOG ◀ : Same as turning the JOG counter-clockwise.

SHUTTLE ▶▶

1: fast forward 2X or slow forward 1/2X.

2: fast forward 4X or slow forward 1/4X.

3: fast forward 8X or slow forward 1/8X.

4: fast forward 16X or slow forward 1/10X.

5: fast forward 32X or slow forward 1/16X.

6: fast forward 600X or slow forward 1/32X.

SHUTTLE ◀◀

1: fast rewind 2X or slow rewind 1/2X.

2: fast rewind 4X or slow rewind 1/4X.

3: fast rewind 8X or slow rewind 1/8X.

4: fast rewind 16X or slow rewind 1/10X.

5: fast rewind 32X or slow rewind 1/16X.

6: fast rewind 600X or slow rewind 1/32X.

Note: EDSR400: Channel keys #1~4

EDSR600: Channel keys #1~6

#1~16 valid for EDSR900/1600 only

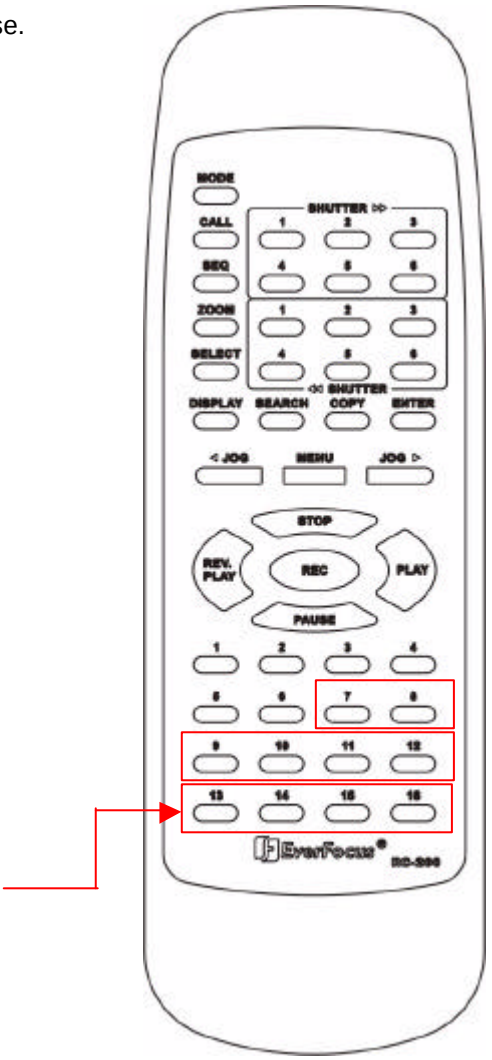
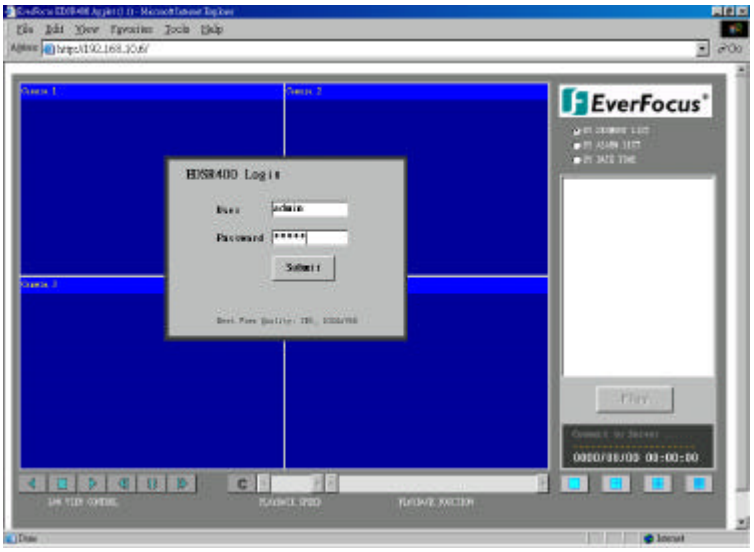


Figure 1

12. View From Internet/Intranet

Basic Operations and Login Display:

Go to the Internet Explorer, key in the network IP address, for example,
http://192.168.10.5 (must be the same IP address as the one assigned to the
unit from the Network Setting Menu. You need a FIXED IP Address, please contact your ISP for the IP)

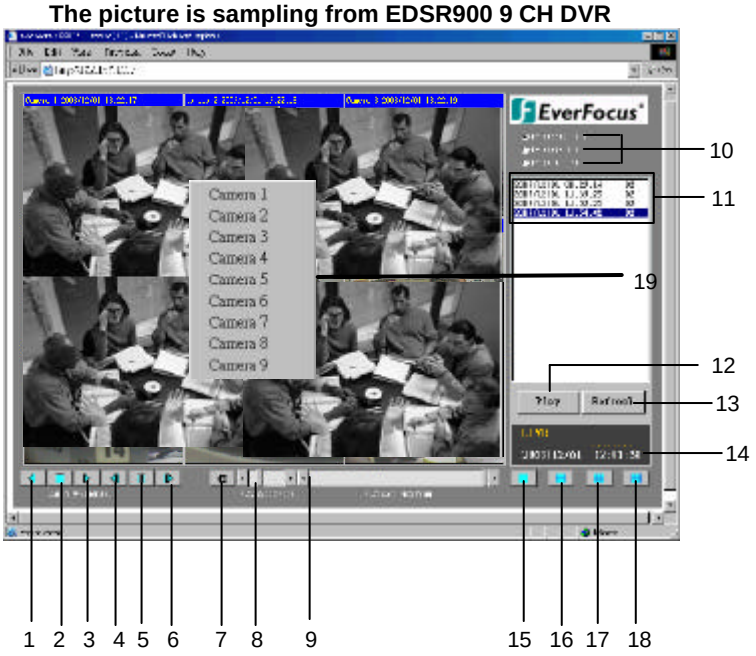


The LOGIN dialog will show on the screen.
User' must enter the correct user-name and password defined in the Network Setting menu.

For example:
Enter ADMIN for user name and ADMIN for password and then Click On "submit" to enter to system.

Main Screen

The picture is sampling from EDSR900 9 CH DVR



Above diagram is the main screen display.
The icons on the lower corner of the screen are mainly for control and Configuration, those on the right corner are for status indication.
If any icon is grayed, it means that the specific function is not accessible in the current mode.
The followings are a brief description for each of the icons.

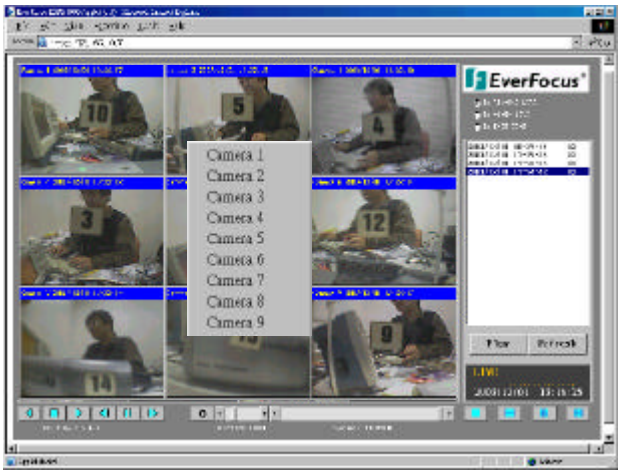
1. **REV. PLAY :** Reverse Video Playback.
2. **STOP :** Press this key to stop Video Playback.
3. **PLAY:** Play back the Video display.
4. **STEP FORWARD** the Video Playback display.
5. **PAUSE:** To pause the Video Playback display.
6. **STEP BACKWARD** the Video Playback display
7. **CONTROL MODE:** To switch to direct remote control mode.

   Note: Only allows user with access level "ADMIN"..

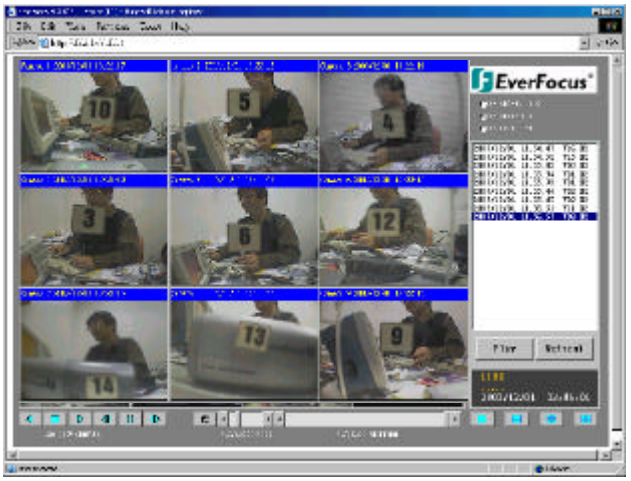
8. **Control for Playback Video Speed**
9. **Control for Playback Position**

10. The system allows up to 3 ways playback video, by **SEGMENT, ALARM LIST** and **DATE TIME**.

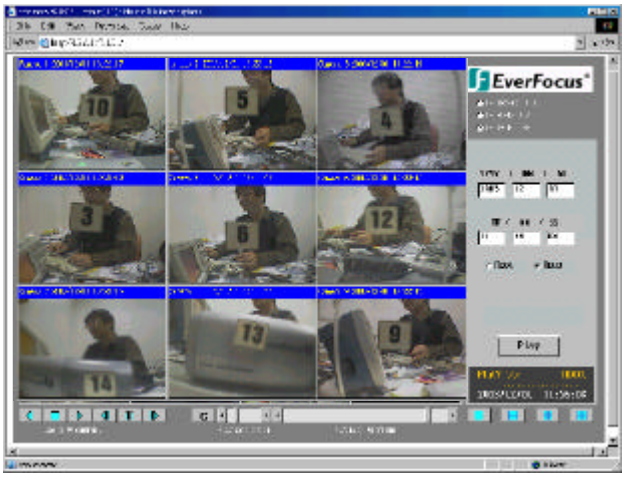
(Playback by SEGMENT LIST, click Refresh to show list)



(Playback by ALARM LIST, click Refresh to show list)



(Playback by Date time)



Above pictures are sampling from EDSR900 9 CH DVR for reference.

11. All available segments are shown in the list. Click to select and highlight.

12. Click to playback selected video segment.

13. Press this icon to show the segment or list.

14. Current connection and playback status is shown along with date and time.

15. Full screen view.

16. Quad screen view.

17. Nine split screen view. (only for 9 CH DVR).

18. Sixteen split screen view (only for 16 CH DVR).

19. A pop-up menu to select camera to view will be shown by pressing right mouse button.

LAN Functional Specification

Specifications:

Network Interface:	10Mbits/s Ethernet (10Base T)
LAN controller Chip:	RealTek 8019
LAN Connector:	RJ-45
Protocol:	HTTP,TCP/IP.ICMP,ARP
Remote Access:	Standard browser such as internet Explorer / Netscape with JAVA support
Image Compression:	JPEG
Used Ports:	**80, 1111, 2222, 3333, 4444, 6666**
Max. user numbers:	**4**
Frame rate:	**max. 1,5 IPS depending on network conditions**

Time Lapse Mode Recording Time Table

✍ When Recording with 160GB HDD

(Estimated with typical image-low noise level)

Lower : 15 kB
Low : 19 kB
Basic : 23 kB
Standard : 27 kB
High : 31 kB
Superior : 35 kB

NTSC	Unit: Hour			system storage(GB):		160
Recording Speed (fps)	PICTURE QUALITY (KB)					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
	15	19	23	27	31	35
60	49.4	39	32.2	27.4	23.9	21.2
30	98.8	78	64.4	54.9	47.8	42.3
20	148.1	117	96.6	82.3	71.7	63.5
15	197.5	155.9	128.8	109.7	95.6	84.7
10	296.3	233.9	193.2	164.6	143.4	127
5	592.6	467.8	386.5	329.2	286.7	254
1	2963	2339.2	1932.4	1646.1	1433.7	1269.8
0.5	5925.9	4678.4	3864.7	3292.2	2867.4	2539.7
0.3	9876.5	7797.3	6441.2	5487	4779	4232.8
0.2	14814.8	11695.9	9661.8	8230.5	7168.5	6349.2

PAL	Unit: Hour					
Recording Speed (fps)	PICTURE QUALITY (KB)					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
	15	19	23	27	31	35
50	59.3	46.8	38.6	32.9	28.7	25.4
25	118.5	93.6	77.3	65.8	57.3	50.8
10	296.3	233.9	193.2	164.6	143.4	127
5	592.6	467.8	386.5	329.2	286.7	254
2	1481.5	1169.6	966.2	823	716.8	634.9
1	2963	2339.2	1932.4	1646.1	1433.7	1269.8
0.5	5925.9	4678.4	3864.7	3292.2	2867.4	2539.7
0.4	7407.4	5848	4830.9	4115.2	3584.2	3174.6
0.2	14814.8	11695.9	9661.8	8230.5	7168.5	6349.2
0.1	29629.6	23391.8	19323.7	16460.9	14336.9	12698.4

Reference:24H=1 day.168H=1 week, 720H=1 month,8760H=1 year

✍ When Recording with 320GB HDD

(Estimated with typical image-low noise level)

Lower : 15 kB
Low : 19 kB
Basic : 23 kB
Standard : 27 kB
High : 31 kB
Superior : 35 kB

NTSC	Unit: Hour			system storage(GB):		320
Recording Speed (fps)	PICTURE QUALITY (KB)					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
	15	19	23	27	31	35
60	98.8	78	64.4	54.9	47.8	42.3
30	197.5	155.9	128.8	109.7	95.6	84.7
20	296.3	233.9	193.2	164.6	143.4	127
15	395.1	311.9	257.6	219.5	191.2	169.3
10	592.6	467.8	386.5	329.2	286.7	254
5	1185.2	935.7	772.9	658.4	573.5	507.9
1	5925.9	4678.4	3864.7	3292.2	2867.4	2539.7
0.5	11851.9	9356.7	7729.5	6584.4	5734.8	5079.4
0.3	19753.1	15594.5	12882.4	10973.9	9557.9	8465.6
0.2	29629.6	23391.8	19323.7	16460.9	14336.9	12698.4

PAL	Unit: Hour					
Recording Speed (fps)	PICTURE QUALITY (KB)					
	LOWER	LOW	BASIC	STANDARD	HIGH	SUPERIOR
	15	19	23	27	31	35
50	118.5	93.6	77.3	65.8	57.3	50.8
25	237	187.1	154.6	131.7	114.7	101.6
10	592.6	467.8	386.5	329.2	286.7	254
5	1185.2	935.7	772.9	658.4	573.5	507.9
2	2963	2339.2	1932.4	1646.1	1433.7	1269.8
1	5925.9	4678.4	3864.7	3292.2	2867.4	2539.7
0.5	11851.9	9356.7	7729.5	6584.4	5734.8	5079.4
0.4	14814.8	11695.9	9661.8	8230.5	7168.5	6349.2
0.2	29629.6	23391.8	19323.7	16460.9	14336.9	12698.4
0.1	59259.3	46783.6	38647.3	32921.8	28673.8	25396.8

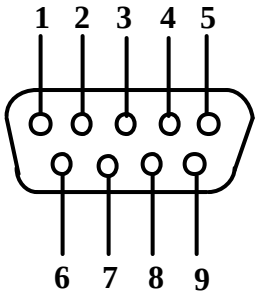
Reference:24H=1 day.168H=1 week, 720H=1 month,8760H=1 year

Serial Interface Specifications

1. RS-232 pin assignment

The DVR may be controlled by a computer or a terminal via the standard D-SUB 9-pin RS-232 connector.

■ The pin assignment of the D-SUB 9-pin connector



DVR			HOST	
PIN #	NAME		PIN #	NAME
1	NOT CONNECTED		1	NOT CONNECTED
2	TXD	→	2	RXD
3	RXD	←	3	TXD
4	NOT CONNECTED		4	NOT CONNECTED
5	GROUND	—	5	GROUND
6	NOT CONNECTED		6	NOT CONNECTED
7	NOT CONNECTED		7	NOT CONNECTED
8	NOT CONNECTED		8	NOT CONNECTED
9	NOT CONNECTED		9	NOT CONNECTED

2. Transmission setting

There are 6 different speeds that can be used to transmit instruction or information through the RS232/RS485 port on the device, 1200 baud, 2400 baud, 4800 baud, 9600 baud, 19200 baud and 3840 baud.

The default setting from the factory is 9600 baud.

Please refer to Chart 6.10 (Page21) for details.

3. Remote Control Protocol

A computer or a terminal can be used to control the unit by sending the packet as following.

1-1. Sample control code packets

Example1 : A packet that send "REC" key to DVR (ID=5)

0x85	(length)
0x00	(Receiver ID high byte)
0x05	(Receiver ID low byte)
0x4B	(OPcode = key)
0x08	(DATA1 = "Rec" keycode)
0x5D	(checksum)

Example2 : A packet that send "PAUSE" key to DVR (ID=4999)

0x85	(length)
0x27	(Receiver ID high byte)
0x07	(Receiver ID low byte)
0x4B	(OPcode = key)
0x0C	(DATA1 = "Pause" keycode)
0x0A	(checksum)

Example3 : A packet that send "PLAY" key to all DVR (broadcast)

0x85	(length)
0x7f	(Receiver ID high byte)
0x7f	(Receiver ID low byte)
0x4B	(OPcode = key)
0x0B	(DATA1 = "Play" keycode)
0x59	(checksum)

2-1. The format of message packet is as follows:

Length Byte (Prefix: 0x86, 0x87, or 0x88 .....)
Receiver ID high byte
Receiver ID low byte
Opcode Byte
Data Byte1
Data Byte2
Data Byte3

Checksum Byte

2-2. Length Byte

This Length Byte is also a prefix. Bit7 must be 1.

EX: 0x87 ==> this packets has 7 bytes length. (not included Length byte itself)

2-3. Receiver ID

2-3. Receiver ID

1). Individual receiver ID

Decimal	14bit binary value	Hbyte	Lbyte	Receiver ID (EDSR)
0	0000000 0000000	00	00	ID = 0
1	0000000 0000001	00	01	ID = 1
2	0000000 0000010	00	02	ID = 2
....				
126	0000000 1111110	00	7e	ID = 126
127	0000000 1111111	00	7f	ID = 127
128	0000001 0000000	01	00	ID = 128
129	0000001 0000001	01	01	ID = 129
255	0000001 1111111	01	7f	ID = 255
256	0000010 0000000	02	00	ID = 256
....				
511	0000011 1111111	03	7f	ID = 511
....				
16382	1111111 1111110	7f	7e	ID = 16382

2). Broadcast ID

Decimal	14bit binary value	Hbyte	Lbyte	Receiver ID
16383	1111111 1111111	7f	7f	all EDSR connect to RS485/RS232

2-4. Opcode Byte & Data bytes

2-4-1. OPcode

OPcode	Data1	Function
0x4B	Keycode	A remote key pressed
0x4D	command	Matrix command

2-4-2. Remote keys (OPcode=0x4B)

Data1	Key
0x00	CH1
0x01	CH2
0x02	CH3
0x03	CH4
0x04	MODE
0x05	ZOOM
0x06	SEQ
0x07	MENU
0x08	REC
0x09	REV.PLAY
0x0A	STOP
0x0B	PLAY
0x0C	PAUSE
0x0D	SEARCH
0x0E	COPY
0x0F	DISPALY
0x10	SHUTTLE<<x1
0x11	SHUTTLE<<x2
0x12	SHUTTLE<<x4
0x13	SHUTTLE<<x8
0x14	SHUTTLE<<x16
0x15	SHUTTLE<<x32
0x16	SHUTTLE<<x600
0x17	SHUTTLE>>x1
0x18	SHUTTLE>>x2
0x19	SHUTTLE>>x4
0x1a	SHUTTLE>>x8
0x1b	SHUTTLE>>x16
0x1c	SHUTTLE>>x32
0x1d	SHUTTLE>>x600

Data1	Key
0x1e	JOG<
0x1f	JOG>
0x20	CH5 (EDSR600)
0x21	CH6 (EDSR600)
0x22	(reserve)
0x23	(reserve)
0x24	(reserve)
0x25	(reserve)
0x26	(reserve)
0x27	(reserve)
0x28	(reserve)
0x29	(reserve)
0x2a	(reserve)
0x2b	(reserve)
0x2c	SELECT
0x2d	CALL
0x2e	ENTER
0x2f	(reserve)
0x30	(reserve)
0x31	(reserve)
0x32	(reserve)
0x33	(reserve)
0x34	(reserve)

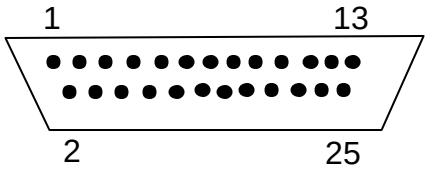
2-5. Checksum Byte

Checksum is computed as the sum of all previous butye (includeing the length byte), then mask with 0x7f.

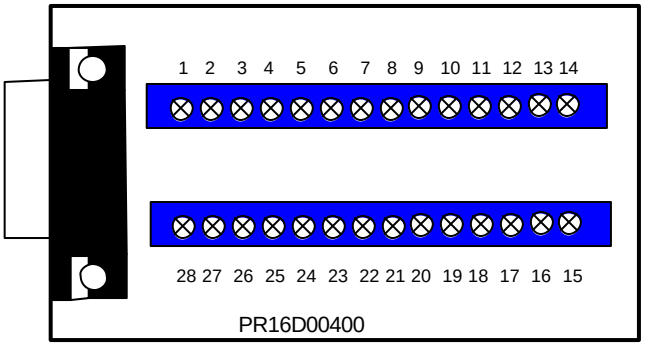
Alarm I/O pin assignment

The alarm connector, **Figure 1**, is used to provide one sensor alarm input for each camera input.
For easy operation, an alarm extension board, **Figure 2**, is provided to connect to the alarm connector.

Each alarm input requires two wires, one wire connects to the desired alarm input pin, the second wire connects to the ground.The alarm signal assignment is shown at the following.



<Figure 1>
D-SUB 25 pin female connector (DVR)



<Figure 2>
PR16D00400 Alarm extension board

DVR

PIN #	NAME / Function
1	GND Ground
2	ALM 1 Alarm In 1
3	ALM 2 Alarm In 2
4	ALM 3 Alarm In 3
5	ALM 4 Alarm In 4
6	ALM 5* Alarm In 5
7	ALM 6* Alarm In 6
8	ALM 7* Alarm In 7
9	ALM 8* Alarm In 8
10	ALM 9* Alarm In 9
11	ALM 10* Alarm In 10
12	ALM 11* Alarm In 11
13	ALM 12* Alarm In 12
14	ALM 13* Alarm In 13
15	ALM 14* Alarm In 14
16	ALM 15* Alarm In 15
17	ALM 16* Alarm In 16
18	ALMRST Alarm Reset
19	REC Record In
20	GIN10 Reserved
21	DISKFULL Disk Full Out
22	GO1 Reserved
23	ALM-N.C Alarm Out N.C.
24	ALM-N.O Alarm Out N.C.
25	ALM-COM Alarm OUT COM

HOST

PIN #	NAME
1	GND
2	ALM 1
3	ALM 2
4	ALM 3
5	ALM 4
6	ALM 5*
7	ALM 6*
8	GND
9	ALM 7*
10	ALM 8*
11	ALM 9*
12	ALM 10*
13	ALM 11*
14	ALM 12*
15	ALM 13*
16	ALM 14*
17	ALM 15*
18	ALM 16*
19	ALMRST
20	REC- IN
21	GND
22	SPARE- IN
23	DISKFULL
24	SPARE-OUT
25	ALM-N.C
26	ALM-N.O
27	ALM-COM
28	GND

***ALM1~ALM4: EDSR400, ALM1~ALM6: EDSR600**

***ALM5~ALM16 are active only for EDSR600/EDSR-900/EDSR-1600**

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